



Microsoft®

**Windows.net™**

Server Family

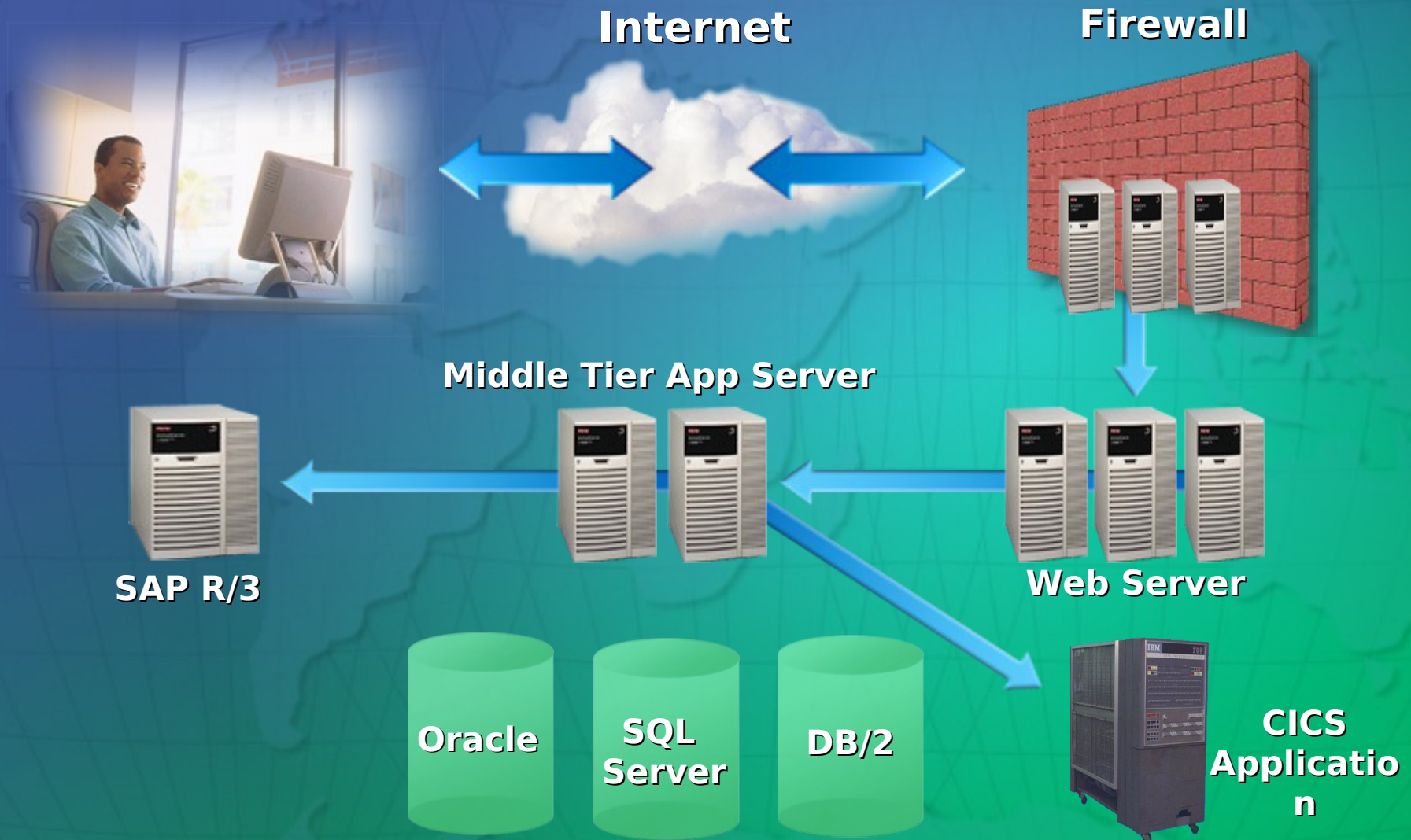
# **Windows® .NET Application Platform Overview**

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Windows Server Product Group  
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# Agenda

- **The .NET Advantage**
- **XML Web services**
- **New features in Windows .NET Server**
  - **Microsoft® .NET Framework**
  - **Internet Information Server (IIS) 6**
  - **Enterprise services (COM+)**
  - **Enterprise UDDI**
  - **Security**
  - **Management**
  - **Deployment**

# The Complexity Of Application Development Within The Organization





# The Complexity Of Application Development Outside The Organization

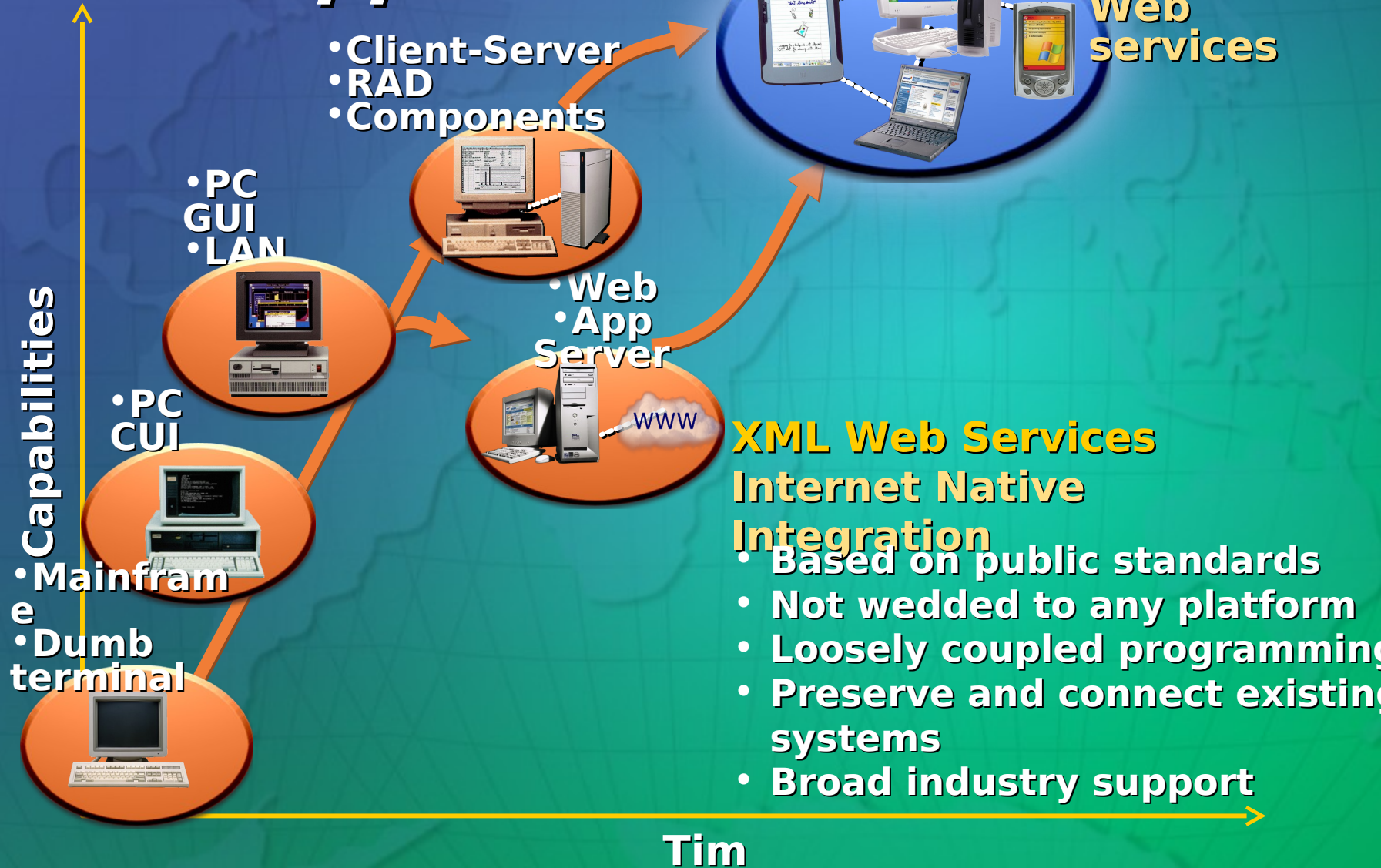


# Three Key Demands

- **Integration imperative**
  - **“Before, applications were just little islands of information and getting stuff from island to island was a big event.”** – Scott Hanselman, Corillian Corporation
- **Do more with less**
  - **“...one of the things that sort of sets us apart from our competitors is that we’re able to deliver solutions very quickly. We deliver solutions in weeks and they are often years. These are big solutions. And so the speed that we can deliver them is very important.”**
    - Andy Neilson, Technical Architect, Webplan
- **It just works**
  - **“Deployment and support of applications is a major issue.”** – Andrew K. Smith, Vice President, Credit Suisse First Boston

# Technology Evolution

## *Shift Happens*





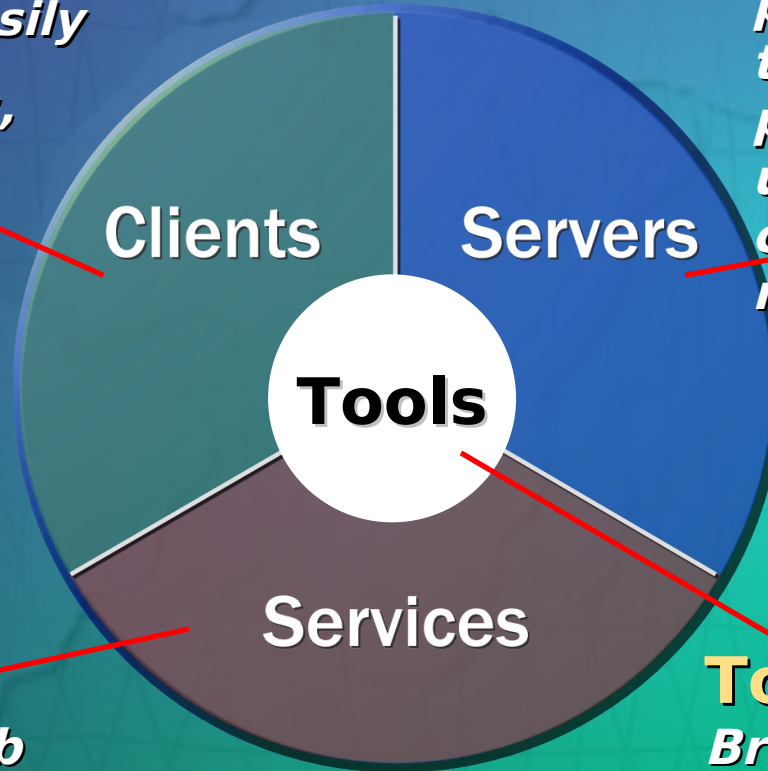
# Internet Application Platforms

## Clients

*Enable users to access and act on data and applications to easily reach a variety of devices, browsers, smart clients*

## Servers

*Provide a set of product enhancements to the core server platform that enable users to quickly meet changing business needs*



## Services

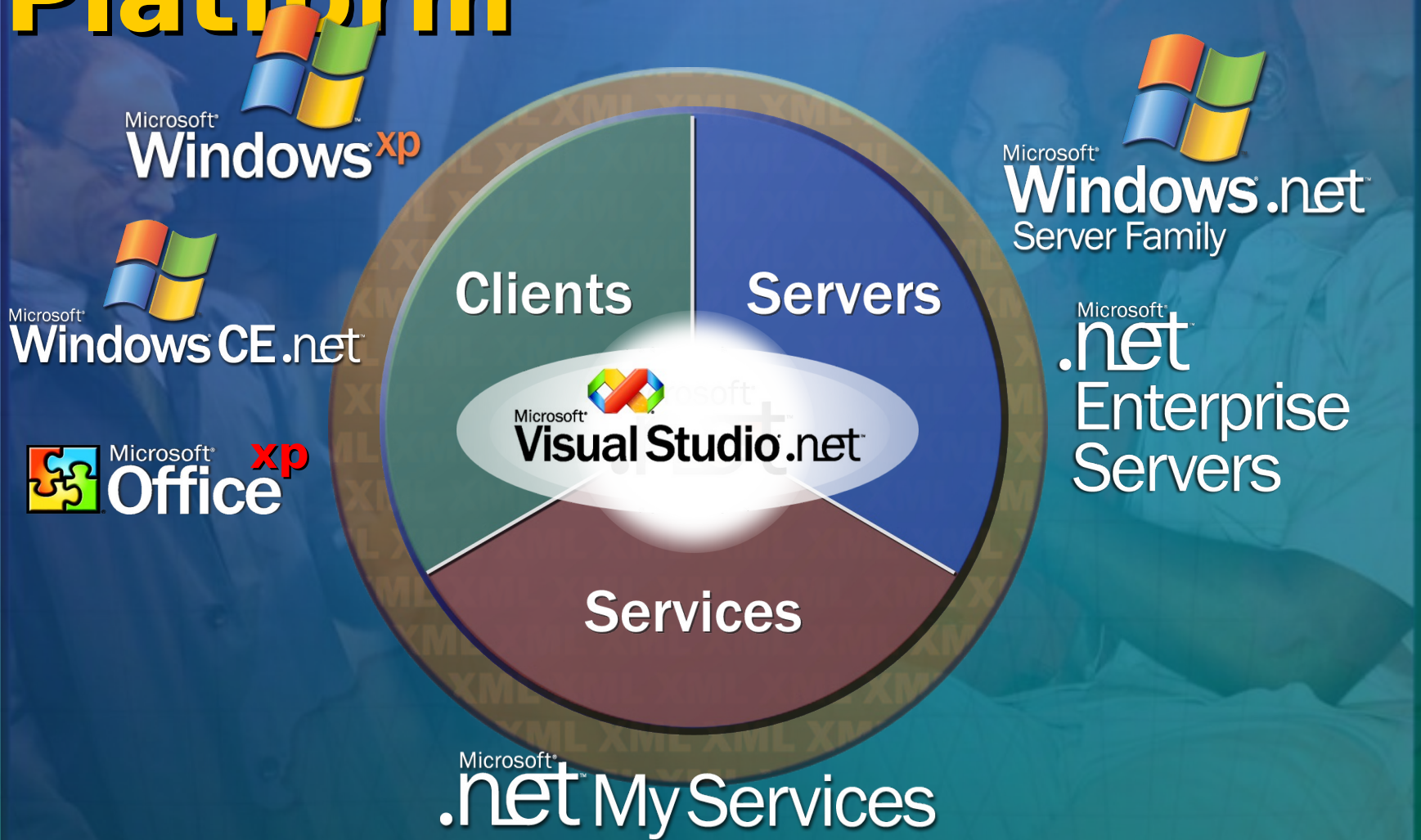
*Support XML Web services protocols and formats and provide a set of programmable services*

## Tools

*Bring together application development paradigms for clients, servers, and services into a unified programming model*



# The Microsoft .NET Platform



# Microsoft® Enterprise Software

Microsoft Visual Studio   Microsoft Office<sup>xp</sup>   Microsoft Windows Server Family   Microsoft Enterprise Servers   Microsoft Windows<sup>xp</sup>



Microsoft®  
**.net**<sup>™</sup>

**Microsoft's software technology for  
connecting your world of information, people,  
systems, and devices**

- **XML Web Services**
- **Development productivity**
- **Operational excellence**

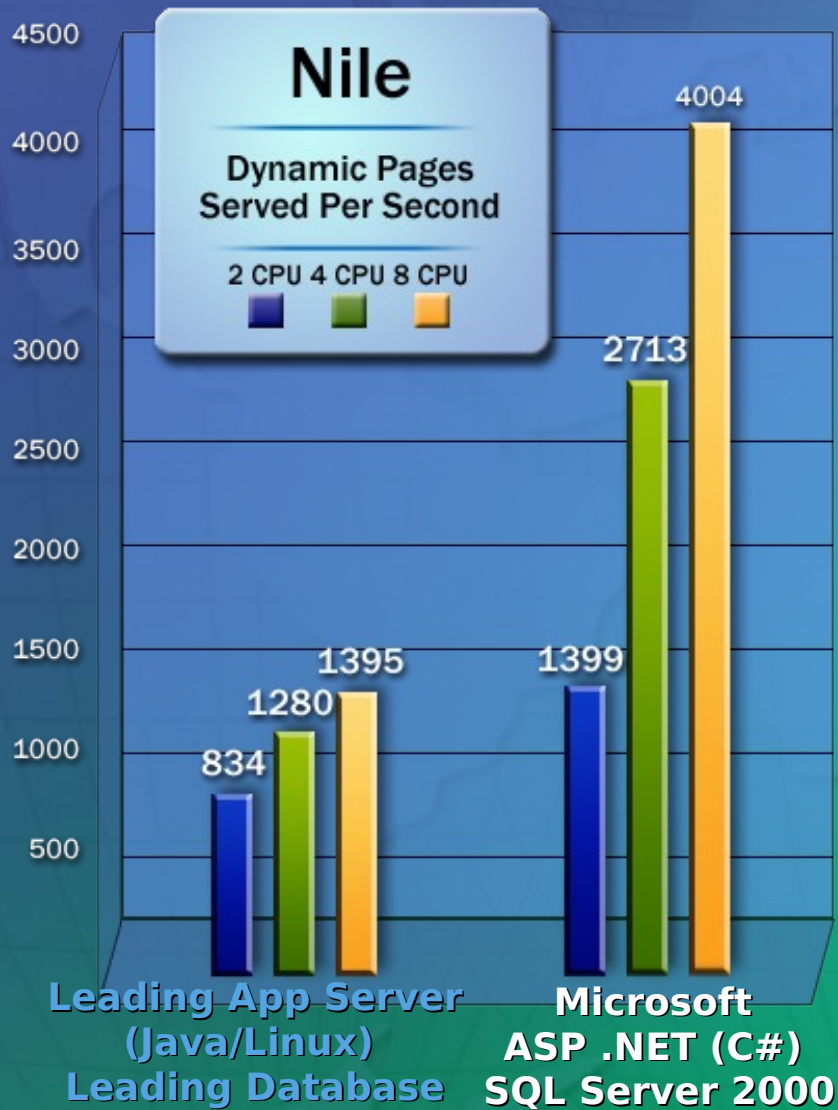
# **The .NET Advantage**

## ***Microsoft's XML Web Services Platform***

- **Native XML Web Services architecture**
  - Complete .NET infrastructure is XML to the core
  - One programming model: Clients, servers, services
  - Comprehensive, integrated .NET product suite
- **Maximum development productivity**
  - Fastest time to market
  - Most productive toolset with support for 24 languages
  - Largest developer base: 65% market share
  - Extends existing skills, code, applications
- **Operational excellence**
  - Designed for scale up and scale out architectures
  - Transparent application failure recovery
  - Automatic health monitoring and crash protection built in



# .NET Versus J2EE: Performance

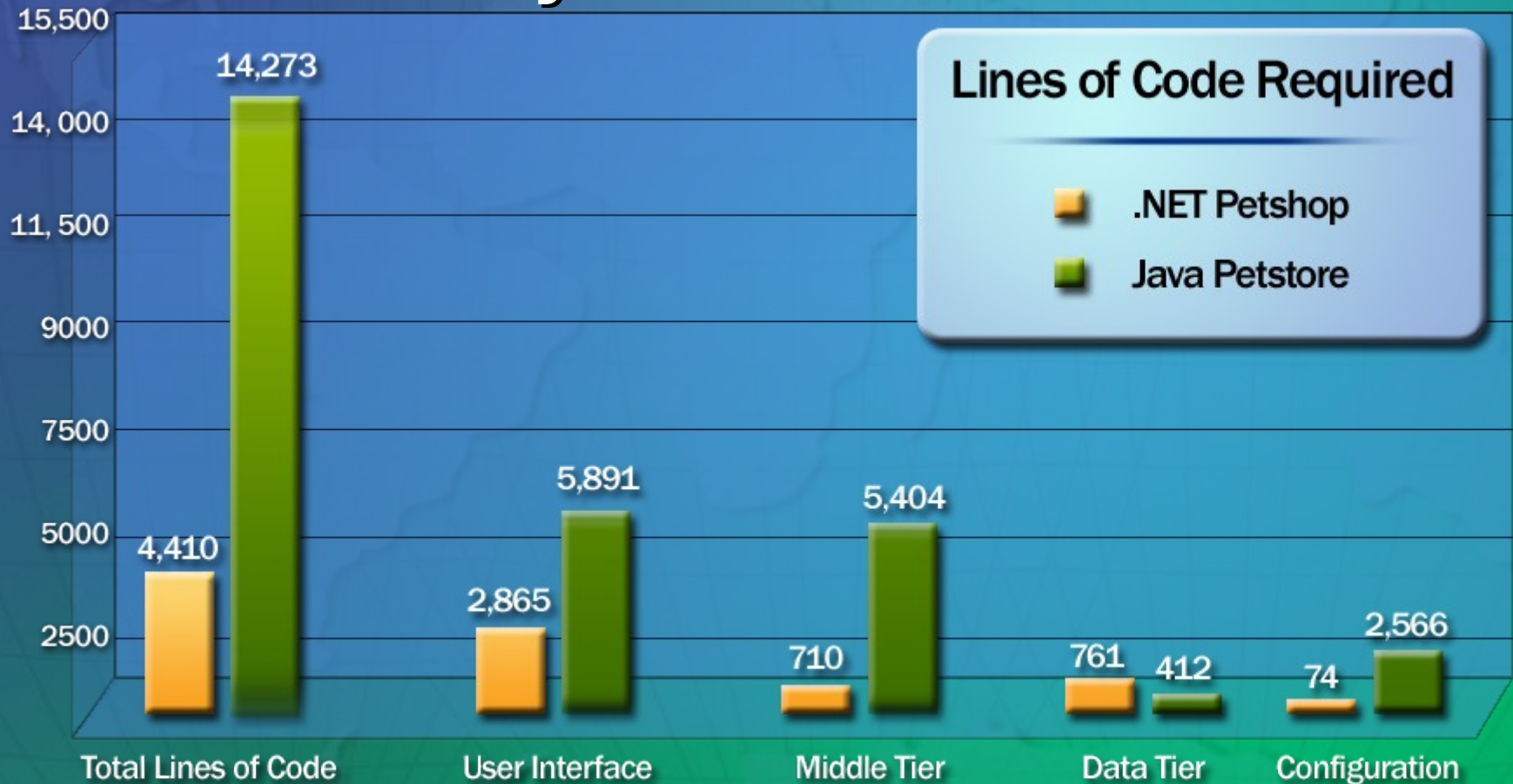


- Industry standard benchmark used by
  - PC Magazine
  - eWeek
  - Doculabs
- .NET shows 1.75 - 3x perf
- Fraction of the cost

# .NET Versus J2EE: Developer

## Productivity

- ◆ Performance: 28 times faster
- ◆ Scalability: 6 times more users
- ◆ Productivity: One third of the code



# .NET Versus WebSphere

|                        | .NET   | WebSphere   | .NET Advantage   |
|------------------------|--|---|--|
| XML Web Services       | <ul style="list-style-type: none"> <li>Platform generates Web services</li> <li>Support for all data types in platform</li> <li>Scales to orchestration through BizTalk</li> </ul> | <ul style="list-style-type: none"> <li>Multiple tools and non-J2EE add-ons</li> <li>Doesn't support complex data types</li> <li>Requires manual coding with MQSeries</li> </ul> | <ul style="list-style-type: none"> <li><i>Better flexibility and developer productivity</i></li> <li><i>More complete inter-app integration</i></li> <li><i>Better support for business processes</i></li> </ul>   |
| Developer Productivity | <ul style="list-style-type: none"> <li>One programming model for clients, servers, services</li> <li>Automatic mobile device support</li> <li>VB®, C++, COBOL, Java</li> </ul>     | <ul style="list-style-type: none"> <li>Multiple programming models just for server; client is bolt-on</li> <li>Transcoding Publisher required</li> <li>Java only</li> </ul>     | <ul style="list-style-type: none"> <li><i>Developers learn one way to build apps that scales everywhere</i></li> <li><i>Applications can be extended w/o coding</i></li> <li><i>Use existing skills</i></li> </ul> |
| Operational Excellence | <ul style="list-style-type: none"> <li>Flexible, simple deployment</li> <li>Auto-versioning</li> <li>Configuration in XML files</li> </ul>   | <ul style="list-style-type: none"> <li>Complex, multi-file deployment</li> <li>No auto-versioning</li> <li>Configuration in DB2 database</li> </ul>                             | <ul style="list-style-type: none"> <li><i>Make application deployment simple</i></li> <li><i>Easy upgrades</i></li> <li><i>Simple, extensible administration</i></li> </ul>  |



# Core .NET Developer Platform

## Windows

- Core services for scalable, reliable, manageable applications
- .NET Framework makes XML Web services integration capabilities native to the platform

### Key Features

- .NET Framework
- Internet Information Server (IIS) and COM+
- Clustering and failover
- Active Directory®



## Visual

## Studio® .NET

- Harnesses power of Windows platform for all developers
- Unifies application and service development in one productive development environment

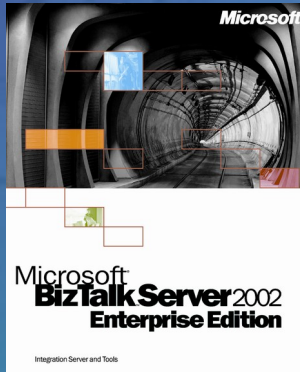
### Key Features

- Graphical designers
- Templates and frameworks
- RAD for client *and* server
- XML Web services



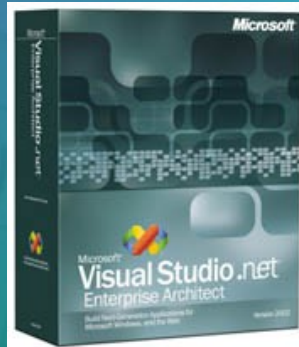
# Integration Infrastructure

**Process  
Orchestration**



- Orchestrate Business Processes
- Long Running Transactions
- Correlation
- Concurrency
- Transport Normalization
- Legacy Connectivity

**Application  
Development**



- App Development
- Procedural + OOP
- Point to Point Web Services
- Enterprise Software Tools
- Build Web Services Interfaces

**Application  
Services**



- XML Web services
- Enterprise Services
- Integrated Security
- NetWare/SFU Integration

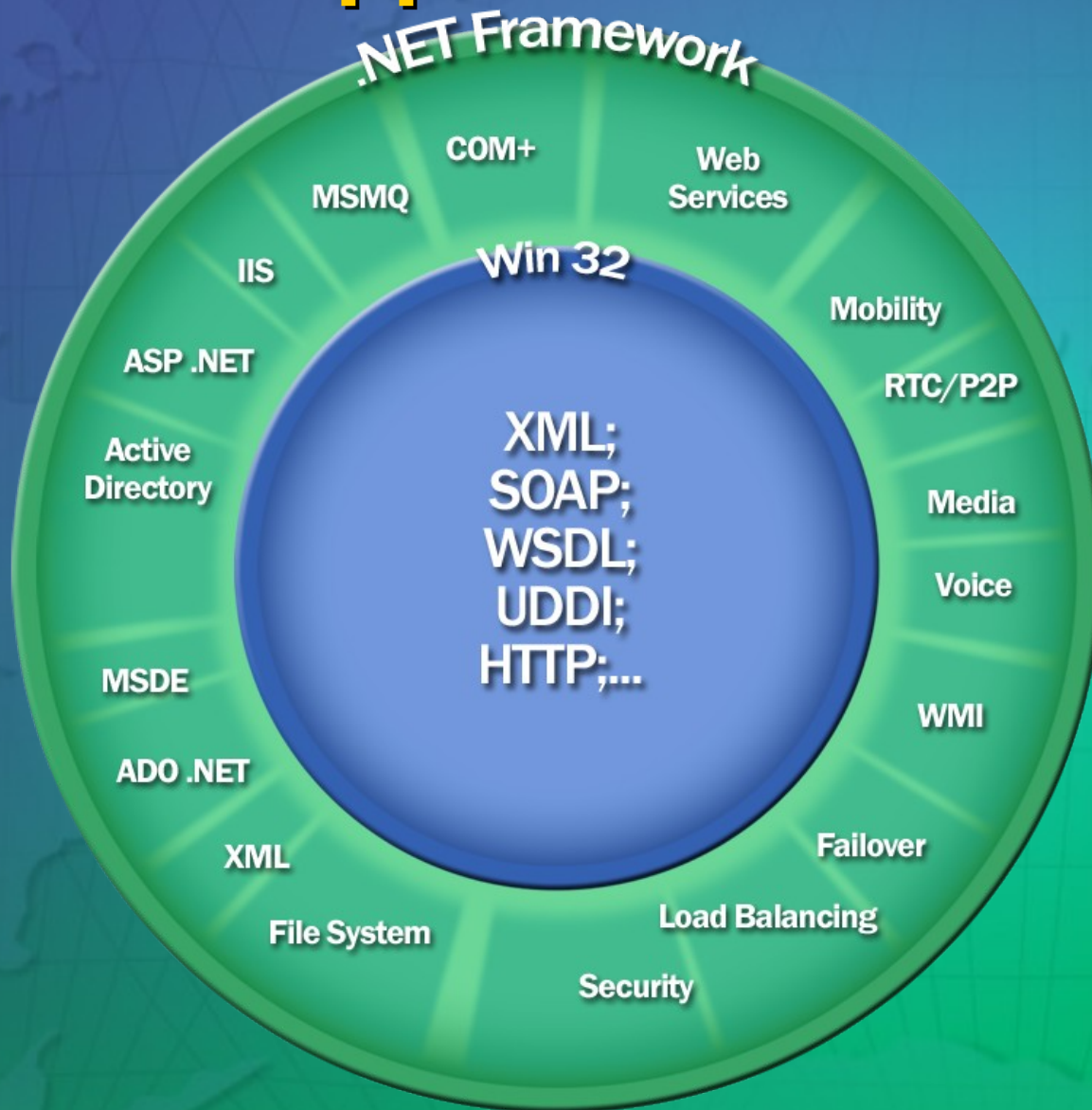
# **Build Today, Better Tomorrow**

- **Build and deploy today on Windows 2000**
  - XML Web Services now
  - Scalable, reliable platform
- **Windows .NET raises the bar**
  - .NET Framework fully integrated
  - Improved performance
  - Tighter security integration
  - Deeper Web Services support



# Windows .NET Server

## Build Better Applications Faster



# **Windows .NET Server Application Platform**

## **Build Better Applications Faster**

### **Simplify Integration and Interoperability (Connected)**

- ❖ Built-in Web service standards: XML, SOAP, UDDI, WSDL
- ❖ .NET Framework is integrated
- ❖ ASP .NET - IIS Integration
- ❖ Passport authentication

### **Increase Developer Productivity**

- ❖ Write less code with .NET Framework
- ❖ Simple Web service creation with ASP .NET
- ❖ Rich set of built-in services
- ❖ Multiple language support

### **Deliver Operational Excellence (Dependable)**

- ❖ More performance and scalability
- ❖ Application security framework
- ❖ Code access security
- ❖ XCOPY deployment

# **.NET Framework Is Integrated**

*Supercharged application environment*

**Visual Studio .NET**

**.NET Framework**

**Windows  
Application Services**

**Communication Protocols  
XML, SOAP, HTTP, HTML**

*Built for Web services*

- Integral SOAP & XML support

*High-productivity,  
multi-language  
development*

- Unified, simplified programming model

*Secure, scalable, high-  
performance execution*

- Advanced security and compiler technologies



# Inside The .NET

## Framework

VB C++ C# Perl Java ...

Windows Forms

ASP .NET

ADO .NET

Enterprise Services

Base Classes

XML

Common Language Runtime

MessageTrans- Active IIS Manage-  
Queuing action Directory ment ...

## Common Language Runtime

Executes code, maintains security, handles component "plumbing" and dependencies

## Windows Forms

Secure, easily deployable rich client classes

## ASP .NET

Classes and engine for building, deploying, and running Web applications and

## ADO .NET

Classes for loosely-coupled data access

## Enterprise Services

Transactions, object pooling, queued components, loosely coupled events

# **.NET Server**

## **IIS 6 Improvements**

### **Scalability**

- Performance Enhancements
- Native 32-bit and 64-bit Web server
- Tens of thousands of sites per box
- Improved remote file server support

### **Reliability**

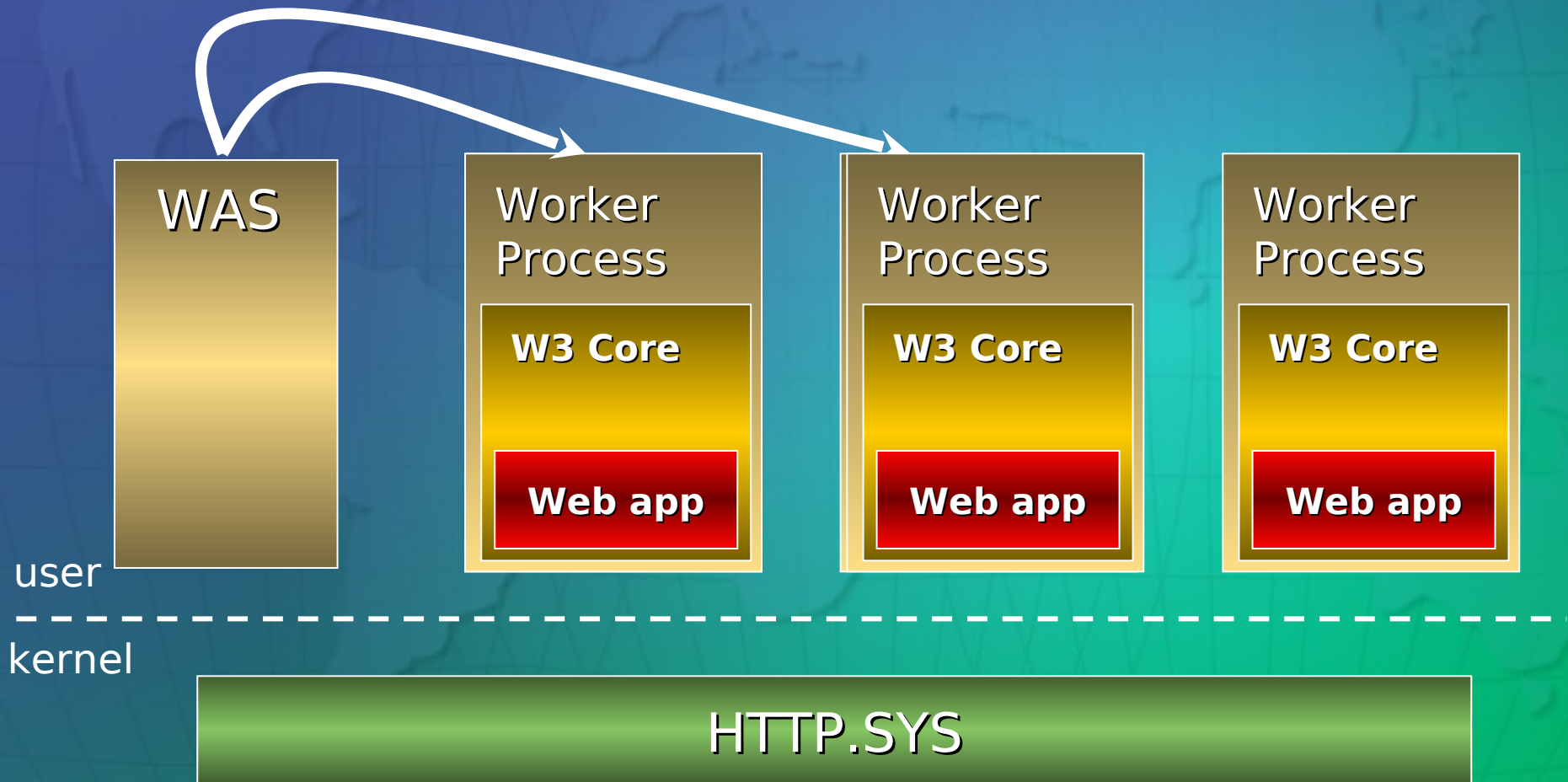
- Process Recycling based on time, schedule, hits and memory consumption
- Improved Debugging support
- Full Application Isolation

### **Management**

- XML Text Metabase with direct edit access
- Website and Application Configuration Import/Export
- WMI Scripting
- Command-Line Tools
- Versioning and Configuration Rollback
- FTP User Isolation

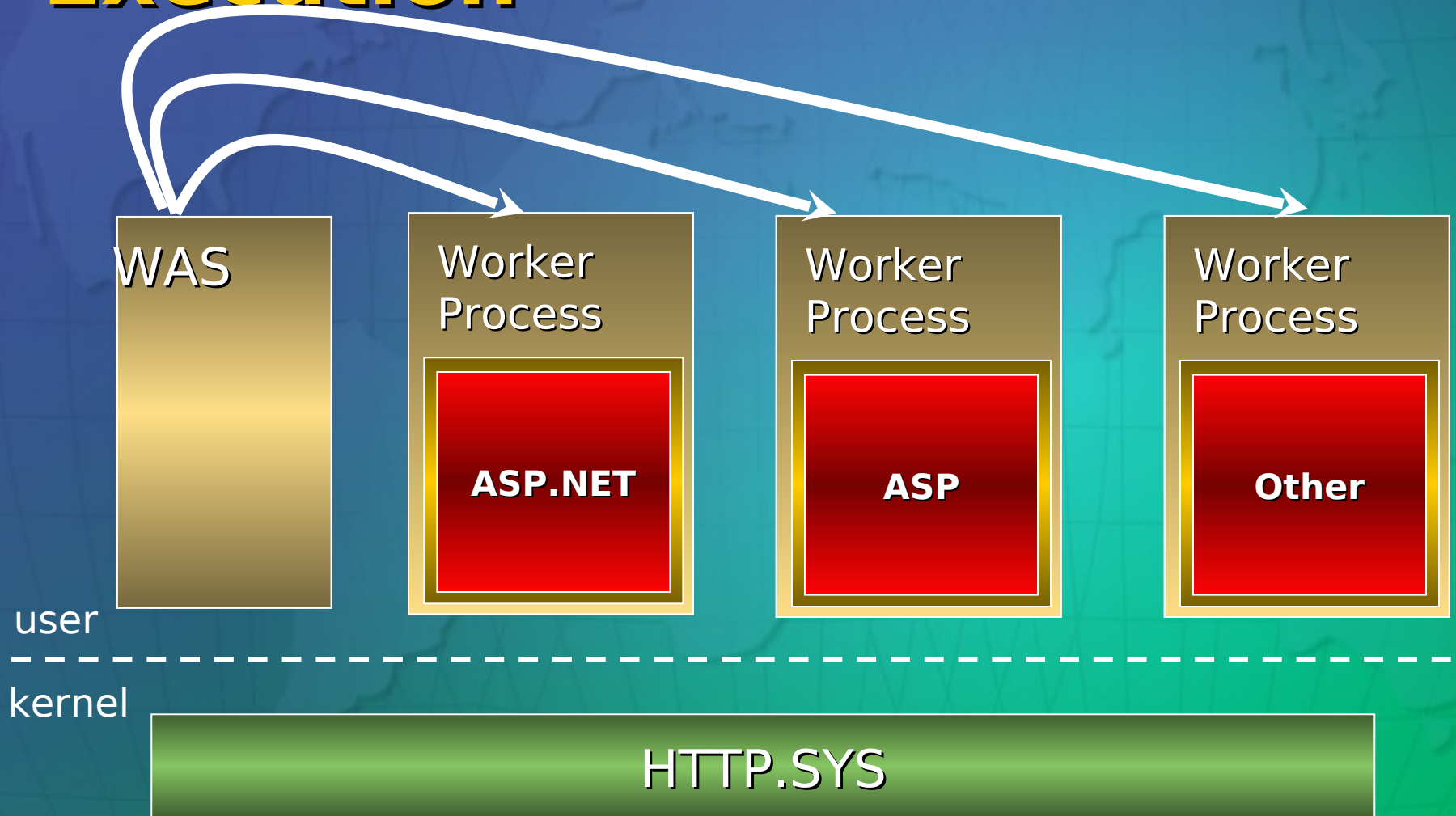
# IIS 6 Architecture

## Always Available





# IIS 6 - Side-By-Side Execution



# **Enterprise Services (COM+ 1.5)**

- **Scalability**
  - Isolation, pooling, threading
- **Availability Enhancements**
  - Recycling, Windows NT® Services
- **Manageability Enhancements**
  - Pause/Disable, Dump
- **Programming Model Enhancements**
  - Services without components
- **Web Service Support**

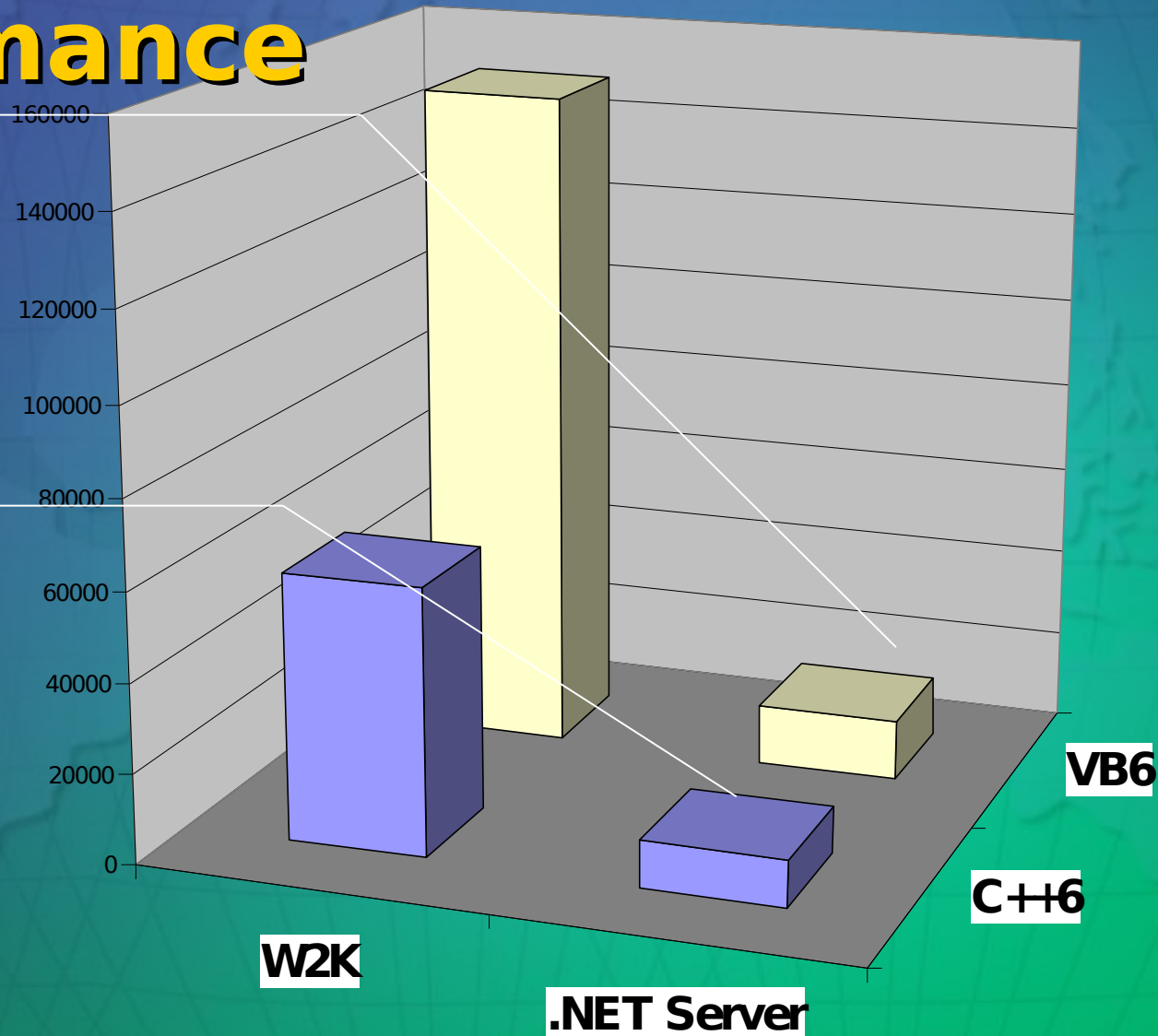
# Enterprise Services: Performance

90%

82%

10,000 in-  
proc  
activations  
/ method  
calls

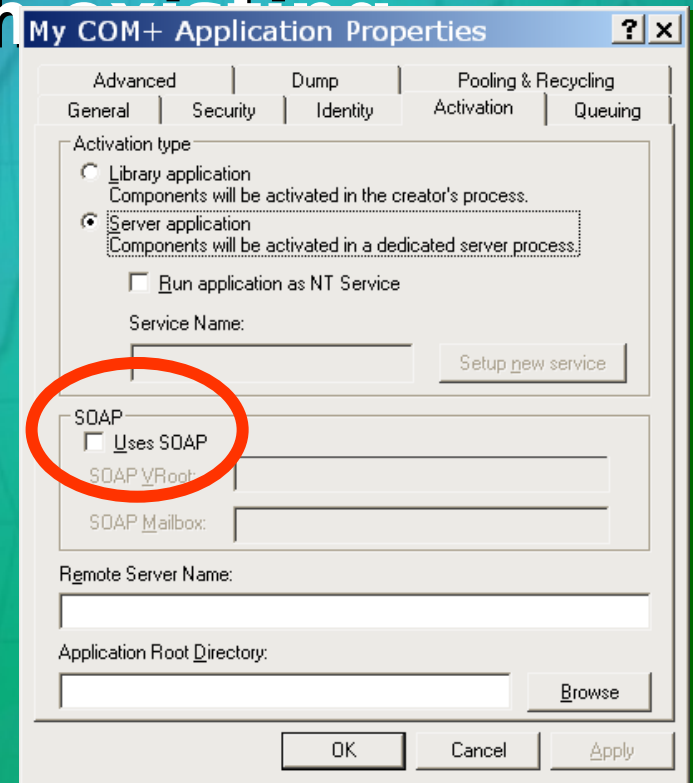
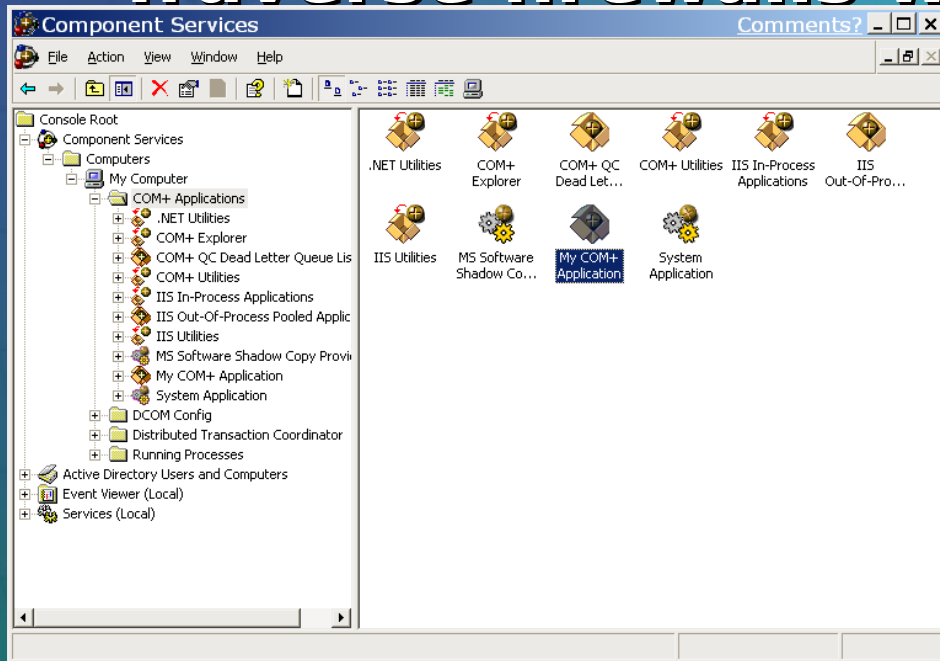
Shorter bar = Faster  
performance





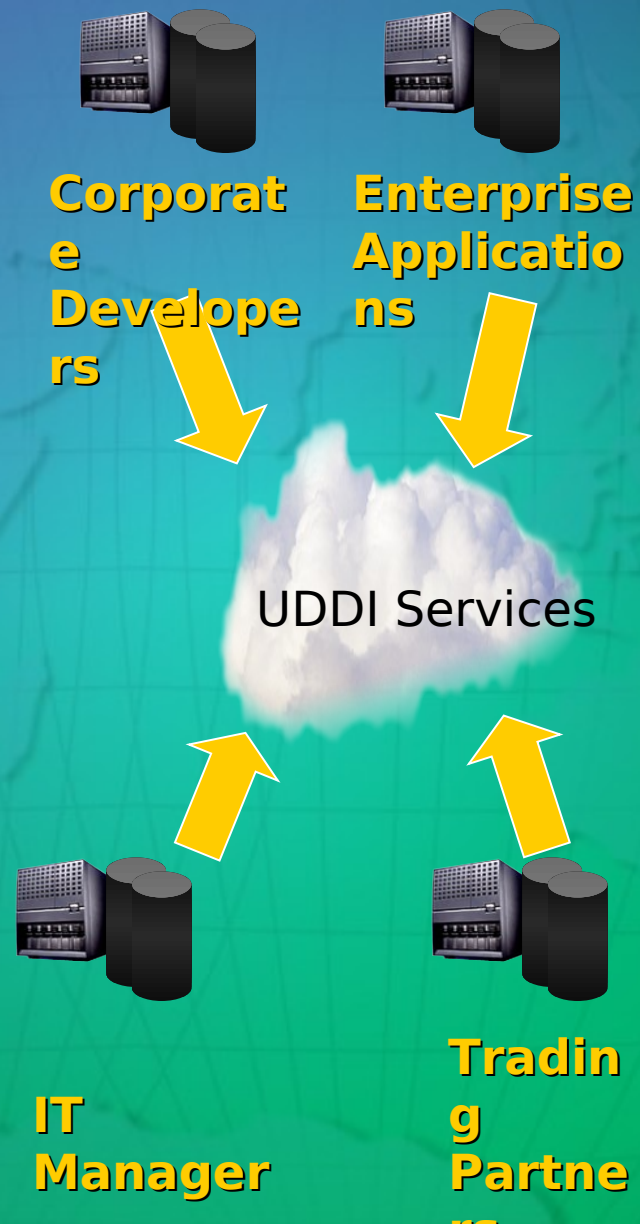
# COM+ And XML Web Services

- Use SOAP with no new code
- Leverage existing apps in new architecture
- Traverse firewalls with existing



# Enterprise UDDI Services

- Developer productivity
- Operational agility
- Partner integration
- Robust, flexible applications
- Available today for B3



# Enterprise UDDI

## Windows .NET Server

ASP.NET  
User Interface

HTTP  
or  
HTTPS

XML SOAP  
API

Internet Information Server (IIS)

.NET Framework -  
Common Language Runtime

SQL Server 2000 O  
R

MSDE

Active Directory  
Authentication



# Windows Security Advances



## Secure Windows

- Reduced default attack surface
- Network/Local Service accounts
- Code Access Security
- Software Restriction Policies

## Authentication

- Multi-protocol transition
- Kerberos standards support
- Support for trusted subsystems
- Map Passport IDs to AD

## Authorization

- Authorization framework
- Role-based authorization
- Separate policies from code
- Seamless Impersonation
- Constrained delegation

# **Scalability And Reliability**

- **Network Load Balancing**
  - **Virtual Clusters**
  - **NLB Manager**
  - **Bi-directional affinity**
- **Clustering**
  - **Simplified setup**
  - **Larger clusters**
  - **WMI support**
- **Web Farm Session State**

# Management

- **WMI**
  - **Integrated Visual Studio .NET support**
  - **.NET Framework support**
  - **WMIC command line extensions**
- **IIS 6.0**
  - **XML based configuration**
  - **Edit while running**
- **System tracing enhancements**



# Deployment

- **Trickle-down rich client applications**
- **XCOPY deployment**
  - No registration required
  - Code is completely self-describing
  - Simply copy components to app dir
- **Metabase import/export**
- **Zero-impact install**
  - Installing one app will not affect another
- **Side-by-side execution**
  - Multiple component versions can co-exist

# **Build Today, Better Tomorrow**

- **Build and deploy today on Windows 2000**
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- **Windows .NET raises the bar**
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  - **Improved performance**
  - **Tighter security integration**
  - **Deeper Web Services support**
  - **Enterprise Services enhancements**

# Windows Server



**Windows Codenamed  
"Longhorn" Server  
Family**

## IT Professionals

- ❖ Deliver distributed computing fabric
- ❖ Establish enterprise credibility

## Developers

- ❖ Revolutionize the application platform
- ❖ Continue building enterprise credibility
  - ❖ IIS 6.0
  - ❖ Native XML; .NET Framework
  - ❖ 64-bit support
  - ❖ Hardware reliability enhancements
  - ❖ Application Management
  - ❖ Application Security Framework
  - ❖ Improved Scalability and clustering

## Knowledge Workers

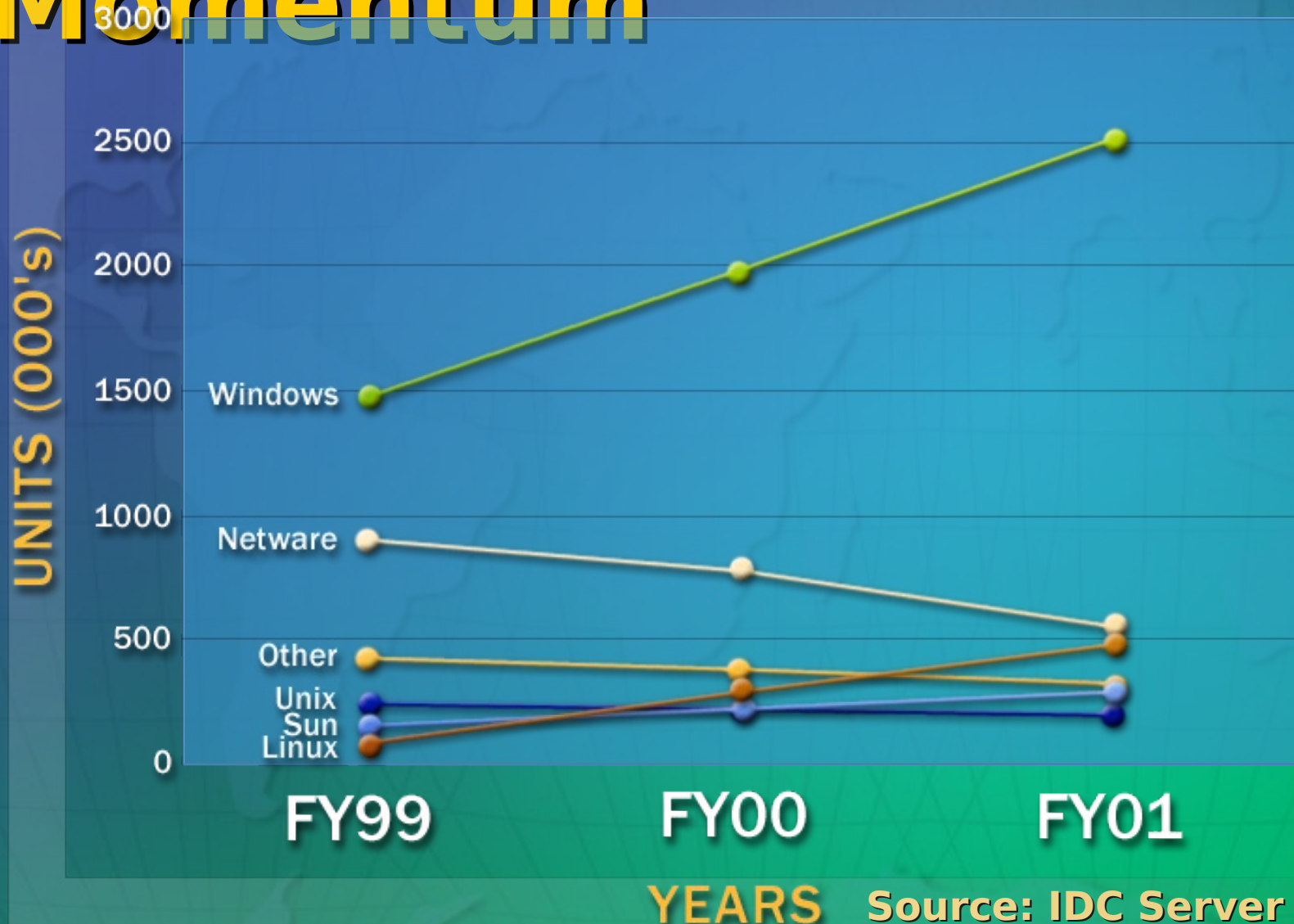
- ❖ Revolutionize collaboration via storage and media
- ❖ Fully federated infrastructure
- ❖ Policy driven scaling
- ❖ Transacted file system
- ❖ Server "personalities"

**reliability, security, manageability, interoperability,  
scalability, simplicity**

# ***Microsoft®***



# Windows Server Momentum



Source: IDC Server Tracker

# Demo

- **IIS 6 Process Recycling**

# Demo

- **Web Services and UDDI**